

## **STATUS OF CLAIMS**

Claims 1 – 68 are pending.

Claims 1 and 61 stand rejected.

Claims 9-20, 27-60, 63-65, and 67 are withdrawn.

Claims 2-8, 21-26, 62, 66 and 68 are objected to.

No claims have been amended.

## **REMARKS**

Reconsideration of the subject application is respectfully requested.

### ***Objections to the Claims***

The Examiner objects to claims 2-8, 21-26, 62, 66 and 68 as depending from a rejected base claim, but would allow the claims if rewritten in independent form including all of the limitations of the base claim and any intervening claims. It is respectfully noted that by the Amendment mailed October 26, 2005, claims 2, 4-5, 21, 23 and 68 were amended to be independent in form. As a result, only claim 61 depends from rejected claim 1, and no claim depends from rejected claim 61. Accordingly, it is respectfully submitted that claims 2-8, 21-26, 62, 66, and 68 are allowable.

### ***35 U.S.C. 102(b) Rejections***

Claims 1 and 61 stand rejected under 35 USC 102(b) as being anticipated by US Published Application 2002/0089262 (Toda). More particularly, the Examiner asserts that the limitation that the width of the piezoelectric film is less than one-half the radiating wavelength of the transducer is a description which does not further reduce the structure of the claimed invention but is instead a method of driving the device, that being using a specific frequency such that the noted inequality is met.

Applicant understands the Office Action as taking the factual position that the wavelength of acoustic radiation emitted by a piezoelectric film transducer of the cited Toda application can be selected by altering a driving frequency.

It is respectfully submitted that the radiating wavelength of the transducer of the cited Toda application is a function of the size of the features, not of the driving frequency. This is stated in Toda, at Paragraph [0040], as follows: "Note that a feature of ultrasound is that the wavelength is not very much smaller than the structural dimensions associated with the cylindrical transducer." In the present specification, it is also stated, at Paragraph [0079], that: "As shown in FIG. 1C, the center to center distance  $d$  between each pair of electrode segments 161 is about one-half wavelength of the acoustic wave in air." Thus, both the present specification and the cited prior art establish that the wavelength is dependent on the dimensions of the transducer, not on the driving frequency. The Examiner has not pointed to any source for the assertion that the wavelength of acoustic radiation emitted by a piezoelectric film transducer can be selected by altering a driving frequency.

The Examiner appears to be taking the position that it is inherent in the cited Toda reference that any desired wavelength can be generated by changing the driving frequency. The standard for a rejection based on inherency is:

"To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (The claims were drawn to a disposable diaper having three fastening elements. The reference disclosed two fastening elements that could perform the same function as the three fastening elements in the claims. The court construed the claims to require three separate elements and held that the reference did not disclose a separate third fastening element, either expressly or inherently.).

MPEP 2112, Paragraph IV.

Thus, for the Examiner to justify a rejection based on inherency, a two-step analysis is required: (1) that the extrinsic evidence makes clear that the missing descriptive matter is necessarily present in the reference, and (2) that it would be so recognized by one of ordinary skill. As both the reference and the present specification teach that the wavelength of piezoelectric film transducers is not dependent on the driving frequency, the extrinsic evidence is contrary to the Examiner's conclusion, and further, one of ordinary skill would not conclude that the wavelength may be selected by altering the driving frequency.

35 U.S.C. 102 (b) states that a person shall be entitled to a patent unless the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States. It is well recognized that "to constitute an

anticipation, all material elements recited in a claim must be found in one unit of prior art", Ex Parte Gould, BPAI, 6 USPQ 2d 1680,1682 (1987), citing with approval In re Marshall, 578 F.2d 301, 304, 198 344, 346 (CCPA 1987).

Present Claim 1 recites:

An ultrasonic transducer comprising:  
a holder having at least two spaced apart cylindrical surfaces;  
a cylindrical piezoelectric film in the spanning between the at least two spaced apart cylindrical surfaces of the holder;  
an outer electrode segment disposed on an outer surface of the film; and  
an inner electrode segment disposed on an inner surface of the film;  
wherein the width of the piezoelectric film is less than one-half the radiating wavelength of the transducer which radiates acoustic energy substantially along a longitudinal axis thereof in response to an excitation voltage applied to the film via the electrode segments.

In contradistinction, the cited reference 2002/0089262 fails to disclose or suggest the claimed relationship between the width of the film and the radiating wavelength of the transducer. Claim 61, which depends from independent claim 1, is also allowable, at least by virtue of its dependency from patentable base claim 1. Reconsideration and removal of this 35 USC 102(b) rejection is requested.

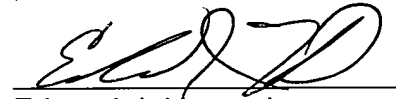
### ***Conclusion***

Having fully addressed the Examiner's objections and rejections, it is believed that Claims 1-8, 21-26, 61, 62, 66 and 68 as presently appearing in this application stand in condition for allowance. Such allowance is respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited

to contact the applicant's attorney at (215) 542-5824, so that a mutually convenient date and time for a telephonic interview may be scheduled.

Respectfully submitted,

Date: 6/15/06



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